Fakultät für Naturwissenschaften

Institut für Chemie

lädt ein

gemeinsam mit der Gesellschaft Deutscher Chemiker zum

Vortrag

von Herrn

Prof. Dr. Manuel Alcarazo

Institut für Organische und Biomolekulare Chemie

Georg-August-Universität Göttingen

“Sulfonium salts: A practical alternative to hypervalent I(III) reagents”

am: 08.04.2027

um: 09:30 Uhr

wo: im Raum A12.232

Gäste sind herzlich willkommen!

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GDCh

"Sulfonium salts: A practical alternative to hypervalent I(III) reagents"

- The reactivity of sulfonium salts shows many similarities with that of hypervalent I(III) reagents of analogue substitution pattern. Both types of compounds react with low valent metals such as Ni(0) or Pd(0) via oxidative addition at the C-S or C-I bond, respectively; making these species suitable partners for cross coupling reactions. In addition, the highly electrophilic nature of the central heteroatom in these compounds facilitates the one electron reduction of both, sulfonium salts and hypervalent I(III) reagents, which ultimately leads to the homolytic fragmentation of a C–E bond (E = S, I) and the generation of a carbon-centered radical. This fragmentation pattern paves the way to the use of both reagents as radical precursors. Finally, the uncatalyzed reaction of both species with suitable nucleophiles is also possible. This last process often proceeds via the attack of the nucleophile to the central heteroatom followed by reductive elimination of a Nu-R moiety.

Along the last years, we have contributed to the recognition of this relation with the design and synthesis of a series of reagents, which perfectly mimic the reactivity of the I(III)-analogues. In addition, due to their intrinsic thermal stability and tolerance to air and moisture, their purification, isolation as well-defined species, storage, and safely handling on larger scale is much easier. Additionally, sulfonium salts also offer the possibility to carry out further modifications in their structure once the sulfur-containing platform has been incorporated; thus, facilitating the access to reagents with no counterpart in the I(III) realm.

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